

Work Order ID 81397

81397

Page 1

March-14-12 7:47:18 AM

Item ID: D350-636-015

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 27/03/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/03/14 Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3492

C

D4168

A

IIN-D350-636

I

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-015 CHG 002

5/26/09

OK P/C 12/4/9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110

0.00

110

Skidtubes

Skidtubes

Memo

0.00

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D4168

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr, section H-H

4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting, section H-H

5- Drill fwd step holes using DT9616. Ensure proper positioning. All holes as per dwg D4168, detail A

6- Drill pilot holes as per Dwg D4168 sheet 4 (D4168-1 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8- Drill most FWD wearplate hole using DT9678 locating off of 66.54" hole.

9-Open up holes of Detail A to 0.297" (total of 2 holes per side) and .201" (total of 1 hole per side) open holes of detail D section H-H to 0.500" as per dwg D4168

10-Weld D2744 Cap as per Dwg D4168 and QSI 004. Fill grooves in bend left from bending as per QSI 004

JB 12/03/22

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Cust Item ID:

Required Date: 27/03/2012 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Chemical Conversion Coat per QSI005 4.1	0.00							
140									
HandFinish	Memo	0.00							
Hand Finishing									
150	QC3- Inspect Part Finish	0.00							
150									
QC	Memo	0.00							
Quality Control									

MG 12-3-27

1 0 BE 12-03-27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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 Start Date: 13/03/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 27/03/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

160

0.00

160

Skidtubes

Skidtubes

Memo

0.00

1-Open up holes of Detail C and ground handling section AL-AL to 0.625"
 (total of 8 holes per side)
 as per dwg D4168.

2-Open up holes of Detail B to 0.750" (total of 4 holes per side)
 as per dwg D4168.

3- Open float hole to 0.500" (4 per side) section AJ-AJ

•Open wearplate holes to size as per dwg (4 holes per sides) , section CG-CG

4-Chamfer holes of Detail B, C, ground handling section AL-AL and float holes
 section AJ-AJ per dwg D4168 (welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R Sikaflex-291 batch: M120813

exp. date: 12-8-13

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D4168 and D4170-1
 & QSI004

(welding instructions on sheet 8)

A/R Aluminum Rod batch: M120164

9- At section AJ-AJ drill out x-bolt spacer to 0.404"

BB 12/03/27

B 12/26 / 12-3-27

386 12-03-29

W/O:		WORK ORDER CHANGES					
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Ship April 5

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--------------------------------	--------------------------	----------------------	---------	--------	------	---------------	---------------	------------------	----------------

10-Grind welds flush as per Dwg D4168

11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D4168, section AL-AL

12- C'bore section CG-CG

13- Deburr holes

***** FOR DELUXE SKIDTUBE IF APPLICABLE DRILL TOW RING
HOLE IN TUBE *****

170

QC10- Inspect visual per QSI004- ground welds 0.00

170

QC

Memo

0.00

Quality Control

Si2kylz

B/CC 12-03-30
B/CC 12-03-29
B/CC 12/4/12

Dart Aerospace Ltd

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Run Start *NR1*

QC: Date: SPC (Y/N): Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

180

QC5- Inspect part completeness to step on W/O

0.00

180

QC

Memo

0.00

Quality Control

190

Pressure Wash per QSI005 4.3

0.00

190

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

200

Powdercoat

Memo

0.00

Powder Coating

START TIME: 2h30
OVEN TEMPERATURE: 320°F
FINISH TIME: 3h00

1XPM/12/04/04

1 X (2P) 12/04/04

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1

Customer:

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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	QC3- Inspect Part Finish	0.00							
210									
QC	Memo	0.00							
Quality Control	Inspect for foreign object per QSI 024								
220	HandFinishing	0.00							
220									
HandFinish	Memo	0.00							
Hand Finishing	1- Install inserts as per Dwg D4168								

1X8 M/L 12/04/05

1X8 M/L 12/04/05

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 Required Date: 27/03/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	HandFinishing	0.00							
230									
HandFinish	Memo	0.00							
Hand Finishing	1-Inspect for Foreign Objects								
	2-Spray inside of tube with "LPS-3" batch: <u>N/A</u>								
	3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D4168 SIKA FLEX 241 BATCH: <u>M120318</u> EXP DATE: <u>12/01</u>								
	4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube A/R 55-o'ring lube batch: <u>M110348</u>								
	5-Coat all exposed fasteners with "LPS Procyon" batch: <u>M114596</u>								
240	QC5- Inspect part completeness to step on W/O	0.00							
240									
QC	Memo	0.00							
Quality Control									

1 Xp M/L 12/04/05

S.2646

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Run Start ***NR1***

QC: Date: SPC (Y/N): Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	Pick Kit	0.00							
250									
Packaging	Memo	0.00							
Packaging	If making a D350-636-215 pick kit will only requires: 1 X AN3C37A 1 X AN3C34A 1 X AN3C42A 2 X D3493-1								
260	QC4- 100% Inspect kits for completeness	0.00							
260									
QC	Memo	0.00							
Quality Control	*****ensure antiseize is on AN8C21A bolts*****								
270		0.00							
270									
Packaging		0.00							
Packaging	Memo								
Packaging	Identify and pack for shipping as per PPPD350-636-015 Location: _____ PPP rev: <u>SHIP</u>								

(X) SP 12-04-09

5/2/09

[Signature]

Dart Aerospace Ltd

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Run Start *NR1*

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Stop *NR2*

QC: Date: SPC (Y/N): Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan Accept Reject Reject Insp.
Code Qty Qty Number Stamp

280

QC21- Final Inspection - Work Order Release

0.00

280

QC

Memo

0.00

Quality Control

CK 12/4/9

ME
12-04-09

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Picklist Print

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Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 10.09.28 new issue DD verf:EC
11.04.14 ecn11-553 DD verf:EC
NCR 11-906 DD verf:EC

IPP Rev:B
IPP Rev:C 11.10.18 as per

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

AN3C34A

Purchased

No

230

Each

51.0000

1

1

AN3C34A

BOLT

**

m-l 12/04/05

Location

Loc Qty

Loc Code

ST353

51

116075 ✓

31

117514

20

AN3C36A

Purchased

No

230

Each

158.0000

4

4

AN3C36A

BOLT

**

m-l 12/04/05

Location

Loc Qty

Loc Code

FG

4

101261

4

ST353

154

116590

0

119083

2

119324 ✓

57

120641

40

121013

55

4

Dart Aerospace Ltd

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Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C37A

Purchased

No

230

Each

110.0000

1

1

AN3C37A

BOLT

**

SP 12-04-09

Location

Loc Qty

Loc Code

ST354

110

116874

11

117010

2

120422

47

120731

50

AN3C42A

Purchased

No

230

Each

43.0000

1

1

AN3C42A

BOLT

**

SP 12-04-09

Location

Loc Qty

Loc Code

ST354

43

106176

1

118131

2

119673

15

120464

25

D3492-1

Manufactured

No

230

Each

130.0000

8

8

D3492-1

Plug

**

M-12/04/05

Location

Loc Qty

Loc Code

FP002

130

69531

8

74444

2

76235

20

77037

100

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D3492-3 Manufactured No

230 Each 69.0000 8 8

D3492-3

Plug

**

u 12/04/09

Location

Loc Qty

Loc Code

FP-A

69

B81967

x 7

78600

69

x 1

D3873-1 Manufactured No

230 Each 228.0000 7 7

D3873-1

Bushing

**

m 12/04/05

Location

Loc Qty

Loc Code

ST057

182

79561

182

767a1

7

ST067

46

64760

1

68247

4

73829

19

73830

2

79560

20

D4154-041 Manufactured No

230 Each 2.0000 1 1

D4154-041

Wearplate Assembly

**

m 12/04/05

Location

Loc Qty

Loc Code

FG

2

77007

2

8072a

1

D4170-1 Manufactured No

230 Each 13.0000 4 4

D4170-1

Bushing

**

*BE 12/03/09
B 82043 x4*

Location

Loc Qty

Loc Code

LG001

13

71844

5

76677

8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 4

Work Order ID: 81397

81397

Parent Item: D350-636-015

D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D4171-1 Manufactured No

230 Each 9.0000 1 1

D4171-1

Bushing

79561

**

m/d 12/04/05

Location

Loc Qty

Loc Code

ST135

9

77008

9

MS21043-3 Purchased No

230 Each 840.0000 4 4

MS21043-3

Nut

**

m/d 12/04/05

Location

Loc Qty

Loc Code

FG

72

103691

72

GA

334

120693

334

ST301

434

118077

2

118614 ✓

382

118686

30

119758

20

NAS1149C0363R Purchased No

230 Each 3,381.000 8 8

NAS1149C0363R

Washer

**

m/d 12/04/05

Location

Loc Qty

Loc Code

ST297

3381

114742 ✓

3381

8

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 81397

81397

Parent Item: D350-636-015

D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1515H3L

Purchased

No

230

Each

184.0000

4

4

*NAS1515H3I *

WASHER

**

m-l 12/04/05

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

144

118686

3

119438

1

120072 ✓

40

120360

100

4

NAS1611-010

Purchased

No

230

Each

209.0000

8

8

NAS1611-010

O-RING

**

m-l 12/04/05

Location

Loc Qty

Loc Code

FP

50

110915

0

120770

50

FP001

159

110915

14

117460

8

118077

1

118612

3

119438

47

120308

36

120986

50

121166

8

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 81397

81397

Parent Item: D350-636-015

D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1611-013

Purchased

No

230

Each

168.0000

8

8

NAS1611-013

O-RING

**

1121166(48)-all at a time

Location

Loc Qty

Loc Code

FP001

168

116582

5

117291

2

117887

53

119623

36

120360

22

120910

50

NAS1149D0863J

Purchased

No

250

Each

231.0000

2

2

NAS1149D0863.J

WASHER

**

80 12-04-09

Location

Loc Qty

Loc Code

ST298

231

118078

36

119307

95

120308

100

D2744

Manufactured

No

110

Each

60.0000

1

1

D2744

Cap

**

80 12/03/22

Location

Loc Qty

Loc Code

LG002

60

62715

1

70881

10

71861

7

78900

42

March-14-12 7:47:23 AM

Shop Packet Print

Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 81397

81397

Parent Item: D350-636-015

D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D2600-3-BENT

Manufactured No

110 Each

25.0000 1

D2600-3-BENT

Extrusion Bent

**

1 12/03/22

Location

Loc Qty

Loc Code

LG

25

66875

7

73253

1

75021

1

75022

1

75023

1

81330

14

D2743

Manufactured No

160 Each

248.0000 8

D2743

Crossbolt Spacer

**

BE 12/03/29

Location

Loc Qty

Loc Code

LG001

248

67766

4

68251

3

73403

64

74445

1

78603

76

79517

100

D2739

Manufactured No

160 Each

8.0000 1

D2739

350 I Beam

**

Location

Loc Qty

Loc Code

LG

8

72155

1

80083

7

March-14-12 7:47:23 AM

Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 8

Work Order ID: 81397

81397

Parent Item: D350-636-015

D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D3490-3 Manufactured No

160 Each 38.0000 4 4

D3490-3

Cross Bolt Spacer

**

BE 12/03/29
B 02016 14

Location

Loc Qty

Loc Code

LG001

38

78800

38

D3490-1 Manufactured No

160 Each 49.0000 4 4

D3490-1

Cross Bolt Spacer

**

BE 12/03/29
B 81976 14

Location

Loc Qty

Loc Code

LG001

49

62450

2

74875

4

77042

3

78793

40

ALS4-1032-225 Purchased No

230 Each 1,134.000 4 4

AI S4-1032-225

Insert

**

m-l 12/04/05

Location

Loc Qty

Loc Code

ST281

1021

108696

146

110768

62

118386

55

118966

68

120671 ✓

690

ST282

113

120410

100

120451

13

4

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR: Yes No** **DQA:** _____ **Date:** _____
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 81397

81397

Parent Item: D350-636-015

D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

AN8C35A

Purchased

No

230

Each

65.0000

1

1

AN8C35A

BOLT

**

M/L 12/04/06

Location

Loc Qty

Loc Code

FP002

64

115960

1

117834

10

118286 ✓

53

ST346

1

114442

0

115188

0

115960

1

D3488-041

Manufactured

No

230

Each

17.0000

1

1

D3488-041

Blade Fitting Assembly, LH

**

M/L 12/04/05

Location

Loc Qty

Loc Code

FP002

17

61689

1

75056 ✓

7

77021

9

AN6C44A

Purchased

No

230

Each

107.0000

4

4

AN6C44A

BOLT

**

M/L 12/04/05

Location

Loc Qty

Loc Code

FG

2

103964

2

ST343

105

120095

12

120143

25

120465 ✓

27

120641

21

121013

20

*

March-14-12 7:47:23 AM

Shop Packet Print

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 10

Work Order ID: 81397

81397

Parent Item: D350-636-015

D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased

No

230

Each

85.0000

1

1

MS21083C8

NUT

**

m 12/04/05

Location

Loc Qty

Loc Code

FP002

1

115884

1

ST303

14

115884

0

118077

1

119309

2

119436

9

119638

2

ST304

70

120142 ✓

20

120731

25

121011

25

D3631-1

Manufactured

No

230

Each

223.0000

8

8

D3631-1

Washer

**

m 12/04/05

Location

Loc Qty

Loc Code

ST072

223

68062 ✓

2

75548 ✓

221

AN960C10L

NAS1149C0332
R

Purchased

No

230

Each

0.0000

4

4

***AN960C10L ***

washer

**

m 12/04/05 *

m 12/255

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 81397

81397

Parent Item: D350-636-015

D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D2745

Manufactured No

230

Each

136.0000

8

8

D2745

Bushing

**

m-l 12/04/05

Location

Loc Qty

Loc Code

FP

100

79518 ✓

100

FP001

36

69529

1

76142

1

78597

34

NAS1149C0832R

Purchased

No

230

Each

304.0000

1

1

NAS1149C0832R

WASHER

**

m-l 12/04/05

Location

Loc Qty

Loc Code

ST297

304

114915 ✓

304

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 12

14

Work Order ID: 81397

81397

Parent Item: D350-636-015

D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

623.0000

4

4

AN3C6A

BOLT

**

m-p 12/04/05

Location	Loc Qty	Loc Code
FP001	1	
111982	1	
ST351	622	
111982	2	
116419	23	
116549	2	
116704	12	
117619	10	
117688	1	
117872	5	
118422	13	
119449	21	
120423 ✓	133	
120693	400	

MS21043-6

Purchased

No

230

Each

809.0000

4

4

MS21043-6

NUT

**

m-p 12/04/05

Location	Loc Qty	Loc Code
FG	20	
103693	20	
ST301	789	
112314 ✓	83	
117887	6	
118384	200	
120308	500	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 81397

81397

Parent Item: D350-636-015

D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D3493-1

Manufactured No

250

Each

66.0000

2

2

D3493-1

Washer

**

Location

Loc Qty

Loc Code

ST050

66

70697

2

77573

24

78835

40

MS21083C8

Purchased

No

250

Each

85.0000

2

2

MS21083C8

NUT

**

Location

Loc Qty

Loc Code

FP002

1

115884

1

ST303

14

115884

0

118077

1

119309

2

119436

9

119638

2

ST304

70

120142

20

120731

25

121011

25

AN8C21A

Purchased

No

250

Each

51.0000

2

2

AN8C21A

BOLT

**

Location

Loc Qty

Loc Code

ST343

51

118758

5

120094

42

120872

4

March-14-12 7:47:23 AM

Shop Packet Print

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 81397

81397

Parent Item: D350-636-015

D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D2741

Manufactured No

250

Each

37.0000

1

1

D2741

Blade, 350 Skidtube

**

Sp 12-04-09.

Location

Loc Qty

Loc Code

ST

-10

ST466

47

71856

1

76984

36

1x

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 81397 MLCJ

12/03/14

RELEASED
2010-09-15

GENERAL NOTES:

- 1) MATERIAL: MAKE D4168-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- 2) FINISH:
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: D4168-041/-042/-043/-044 = 32.3 LBS
- 8) WELD PER DART QSI 004
- 9) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- 10) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- 11) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- 12) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

A		NEW ISSUE		SC	10.08.09
REV.	DESCRIPTION			BY	DATE
DESIGN	SC	DART AEROSPACE USA, INC.			
DRAWN	SC	PORT HADLOCK, WA			
CHECKED		DRAWING NO.	REV. A		
MFG. APPR.		D4168	SHEET 1 OF 11		
APPROVED		TITLE	SCALE		
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS		
DATE	10.08.09				
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

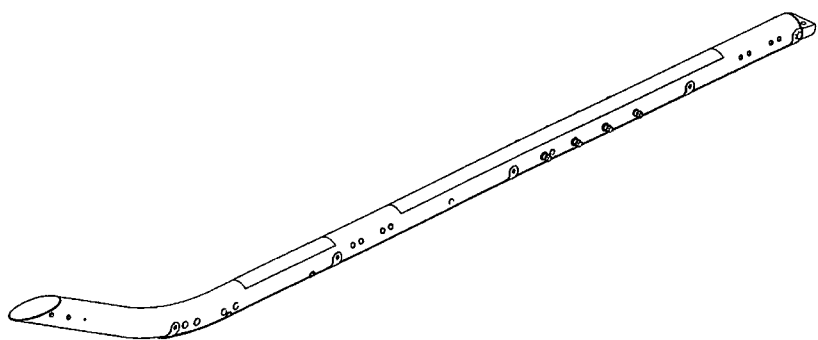
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

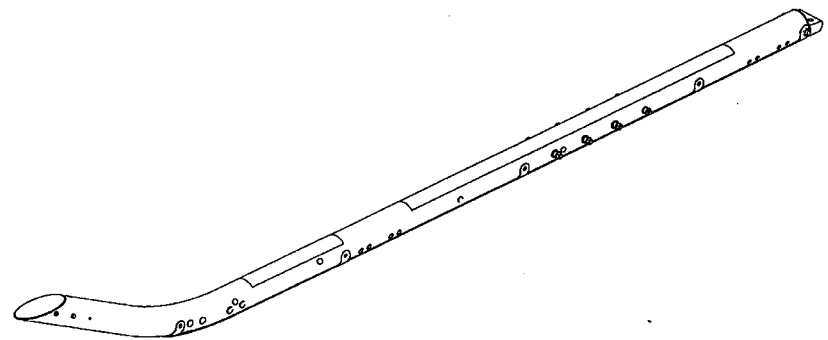
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

81397



D4168-041 350 SKIDTUBE ASSEMBLY, LH



D4168-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15
JW

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4168	SHEET 2 OF 11
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

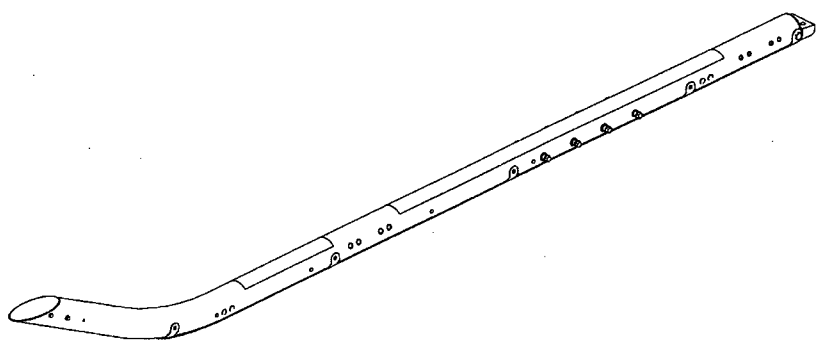
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

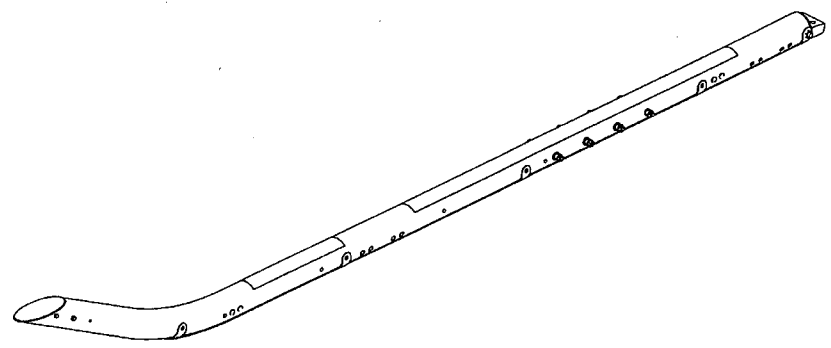
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

81397



D4168-043 350 SKIDTUBE ASSEMBLY, LH



D4168-044 350 SKIDTUBE ASSEMBLY, RH

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MFG. APPR.		D4168	SHEET 3 OF 11
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

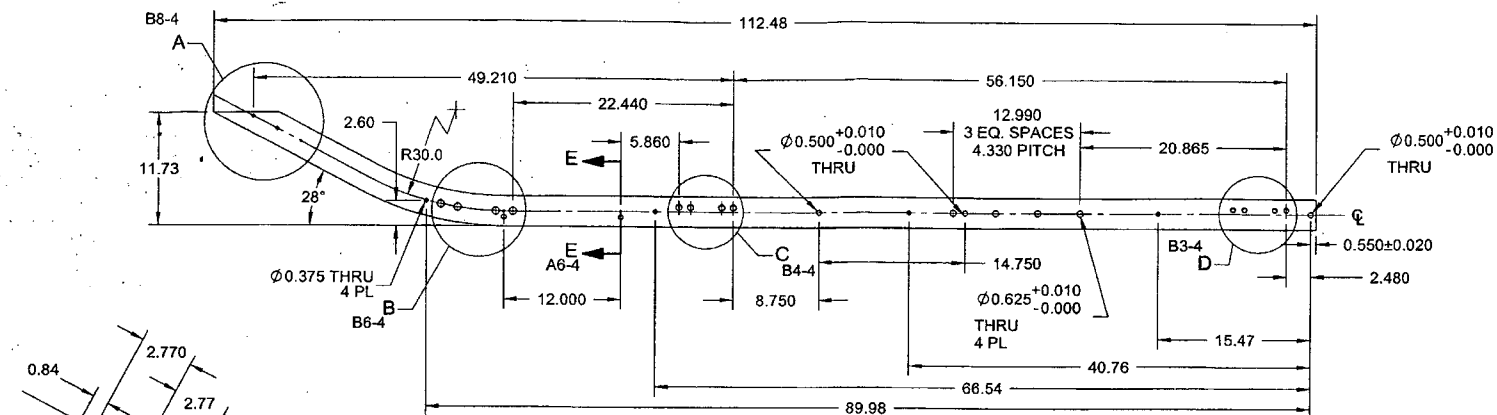
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

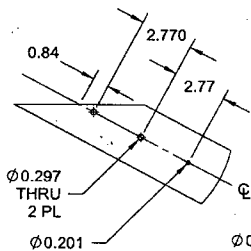
NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

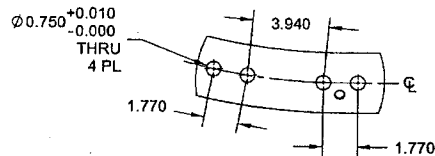
81397



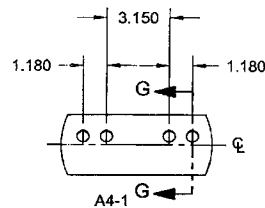
D4168-1 LH SKIDTUBE



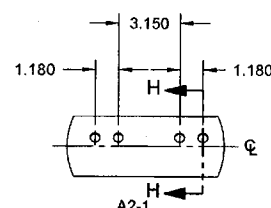
DETAIL A
SCALE 2X



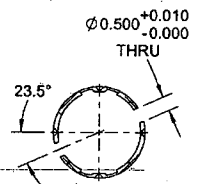
DETAIL B
SCALE 2X



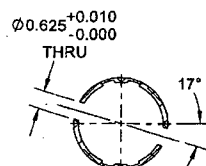
DETAIL C
SCALE 2X



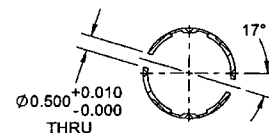
DETAIL D
SCALE 2X



SECTION E-E
SCALE 3X, 2 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

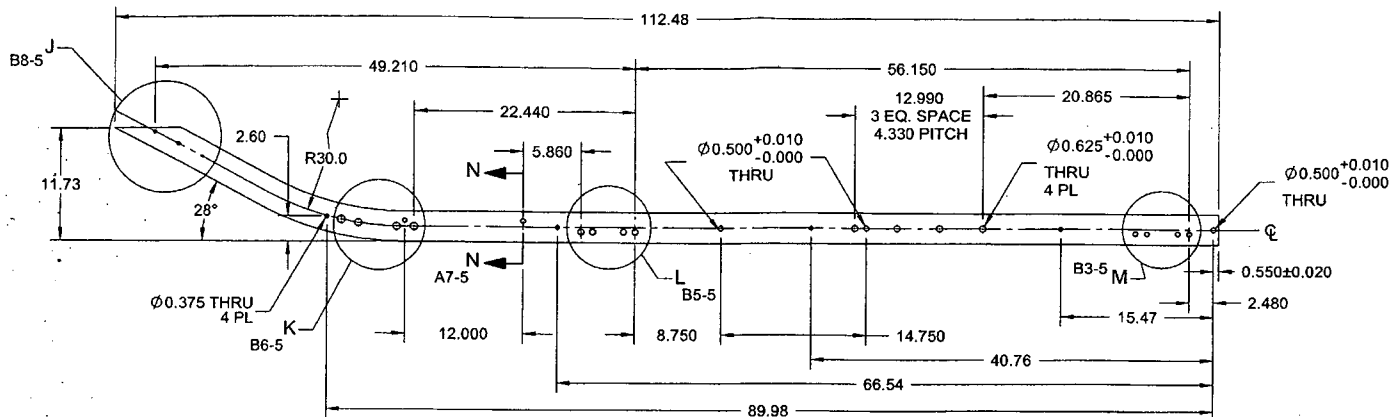
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

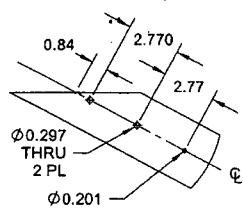
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

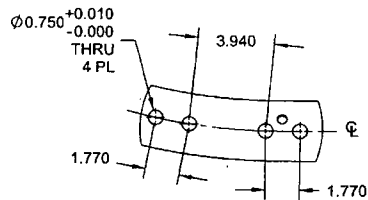
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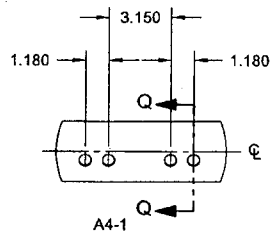
D4168-2 RH SKIDTUBE



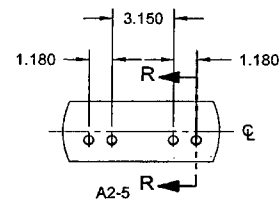
DETAIL J
SCALE 2X



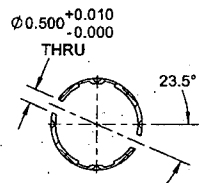
DETAIL K
SCALE 2X



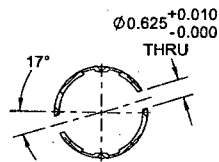
DETAIL L
SCALE 2X



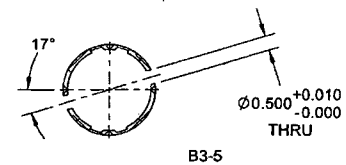
DETAIL M
SCALE 2X



SECTION N-N
SCALE 3X, 2 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

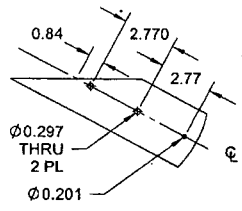
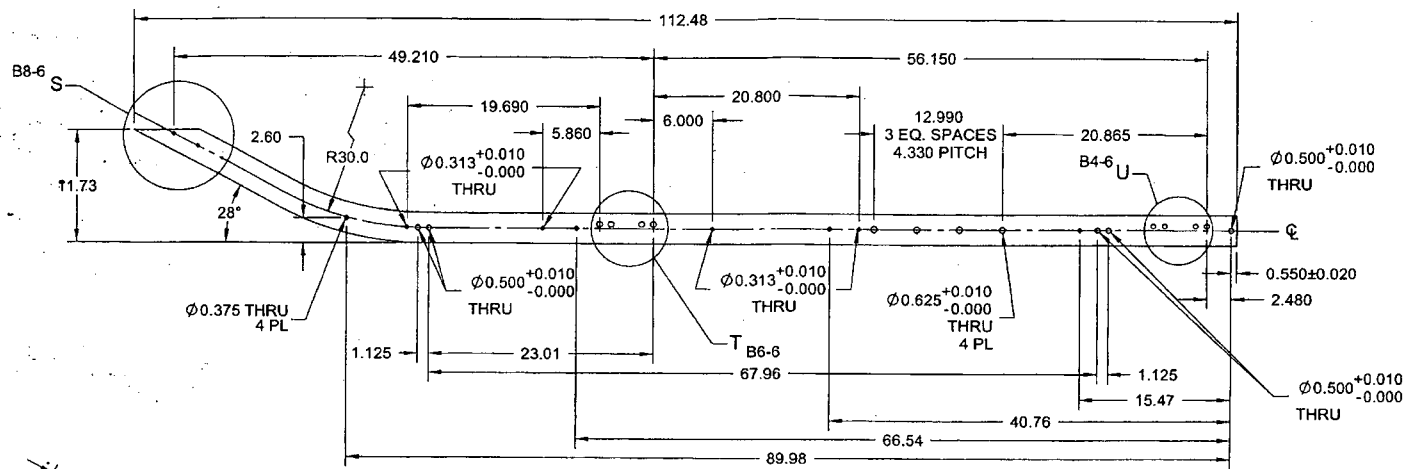
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

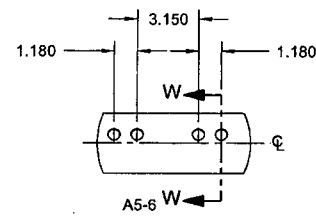
NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

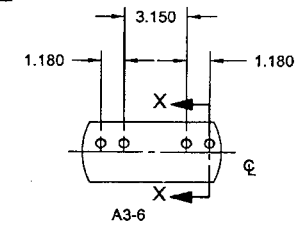
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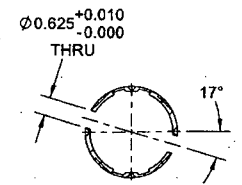
DETAIL S
D8-6
SCALE 2X



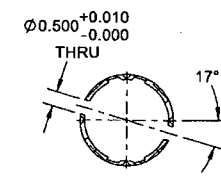
DETAIL T
C5-6
SCALE 2X



DETAIL U
D3-6
SCALE 2X



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

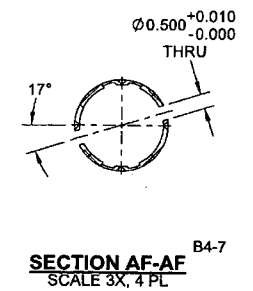
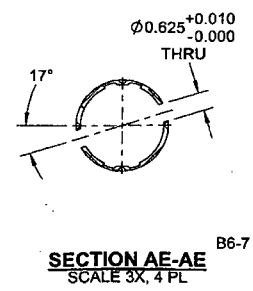
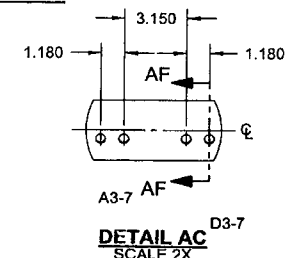
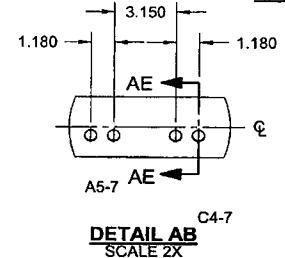
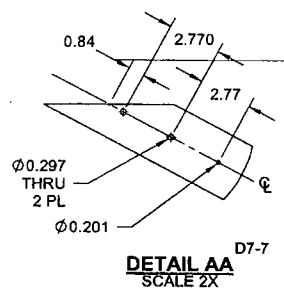
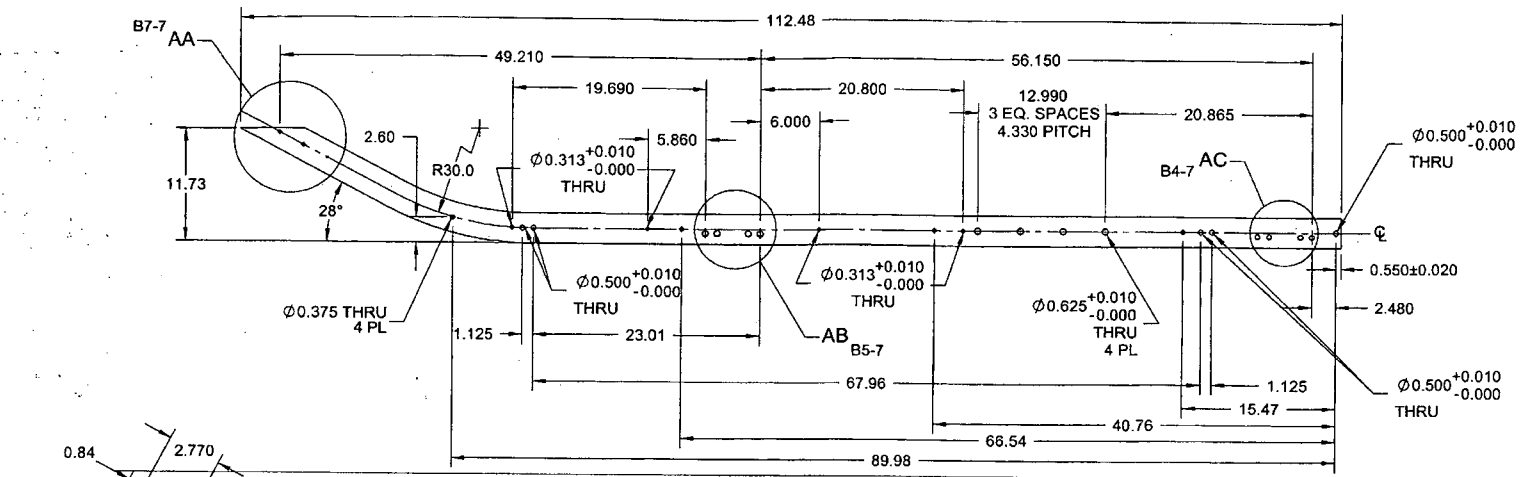
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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8 7 6 5 4 3 2 1

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

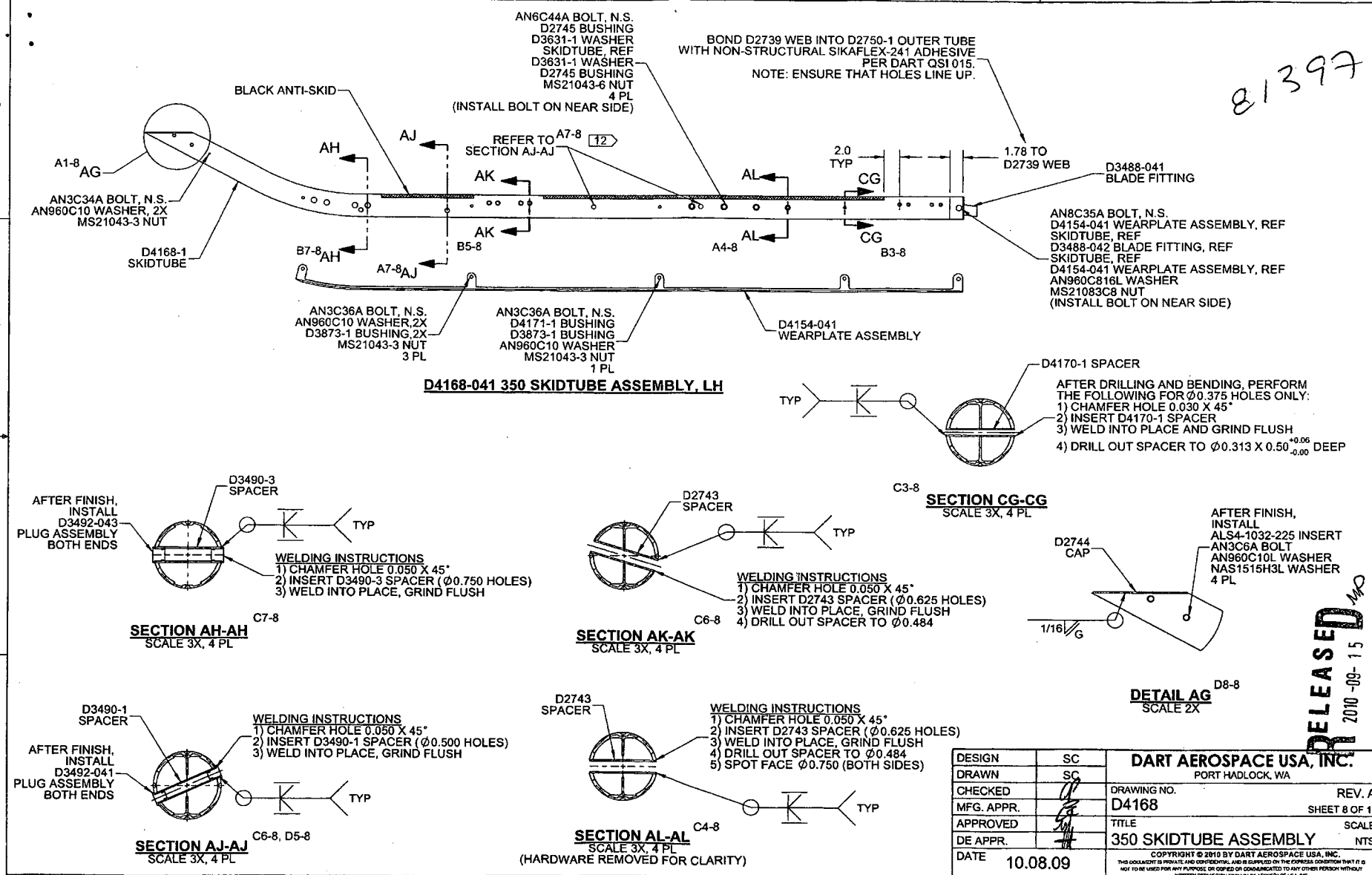
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

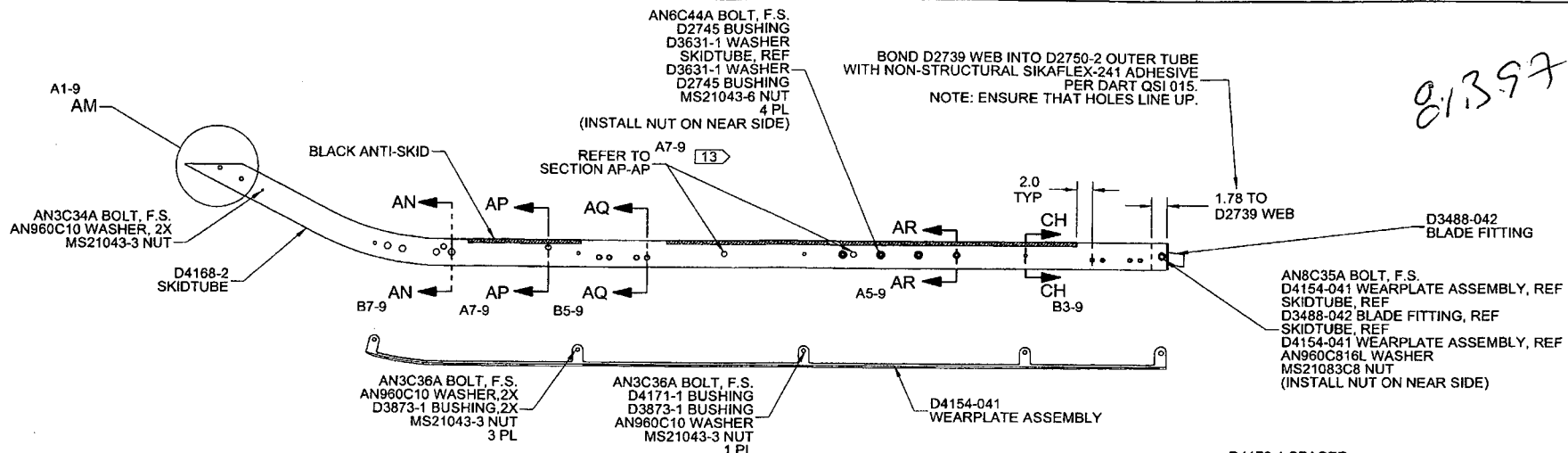
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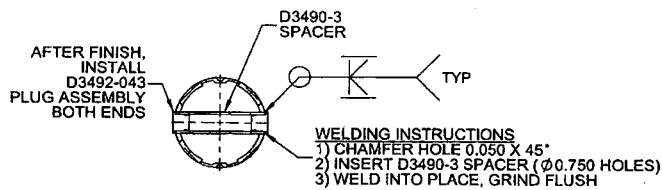
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

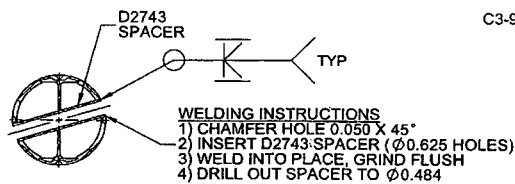
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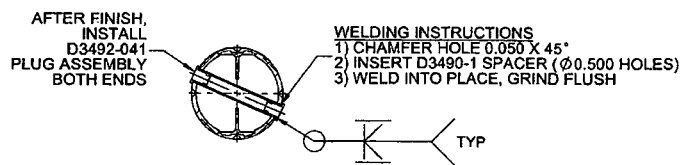
D4168-042 350 SKIDTUBE ASSEMBLY, RH



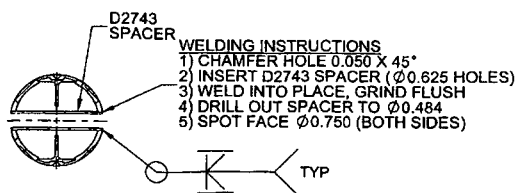
SECTION AN-AN
SCALE 3X, 4 PL



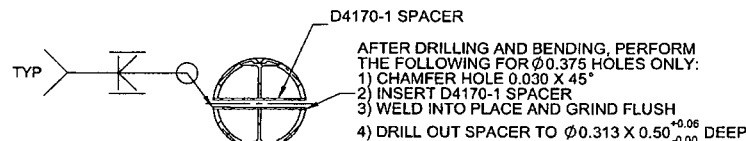
SECTION AQ-AQ
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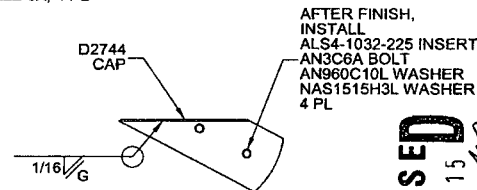
SECTION AP-AP
SCALE 3X, 4 PL



SECTION AR-AR
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)



SECTION CH-CH
SCALE 3X, 4 PL



DETAIL AM
SCALE 2X

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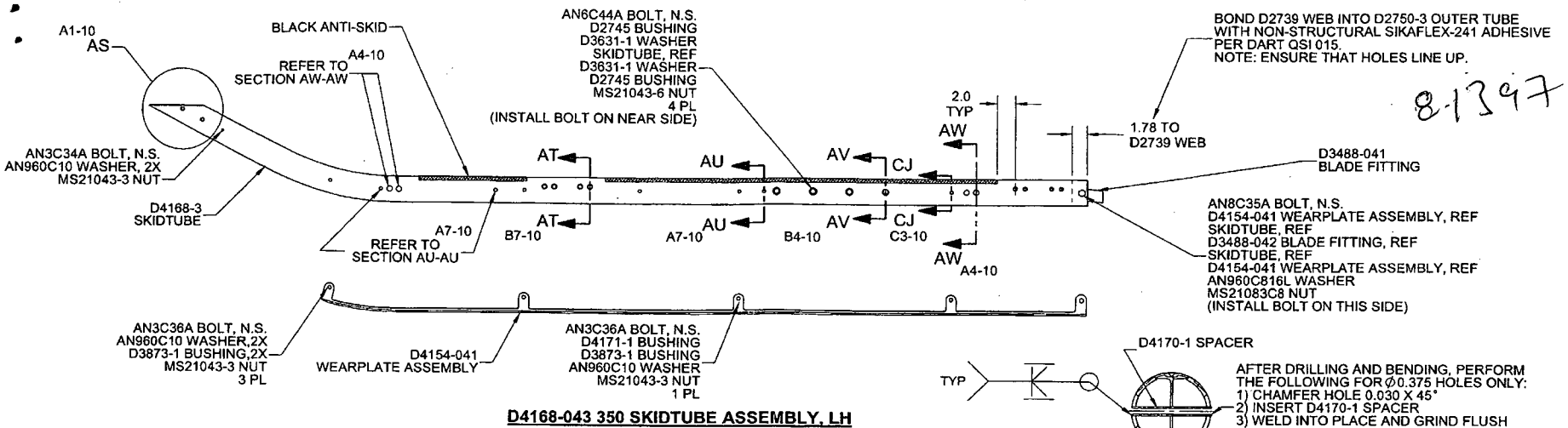
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

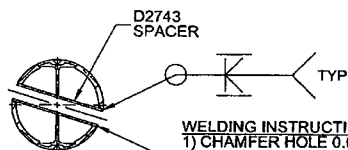
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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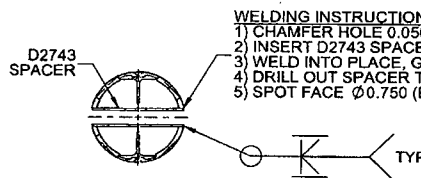
NOTE: Date & initial all entries



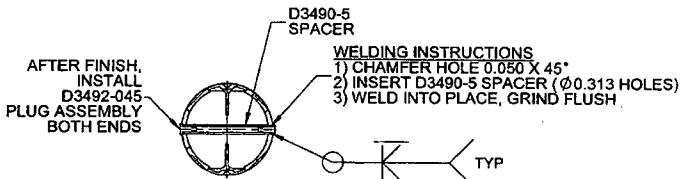
D4168-043 350 SKIDTUBE ASSEMBLY, LH



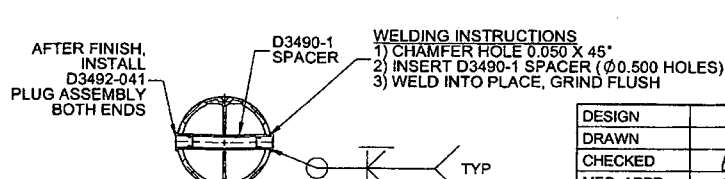
SECTION AT-AT SCALE 3X, 4 PL



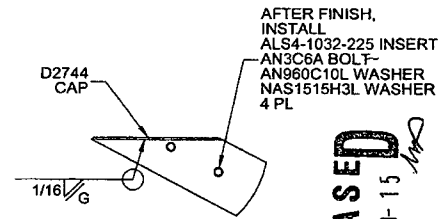
SECTION AV-AV SCALE 3X, 4 PL (HARDWARE REMOVED FOR CLARITY)



SECTION AU-AU SCALE 3X, 4 PL



SECTION AW-AW SCALE 3X, 4 PL



DETAIL AS SCALE 2X

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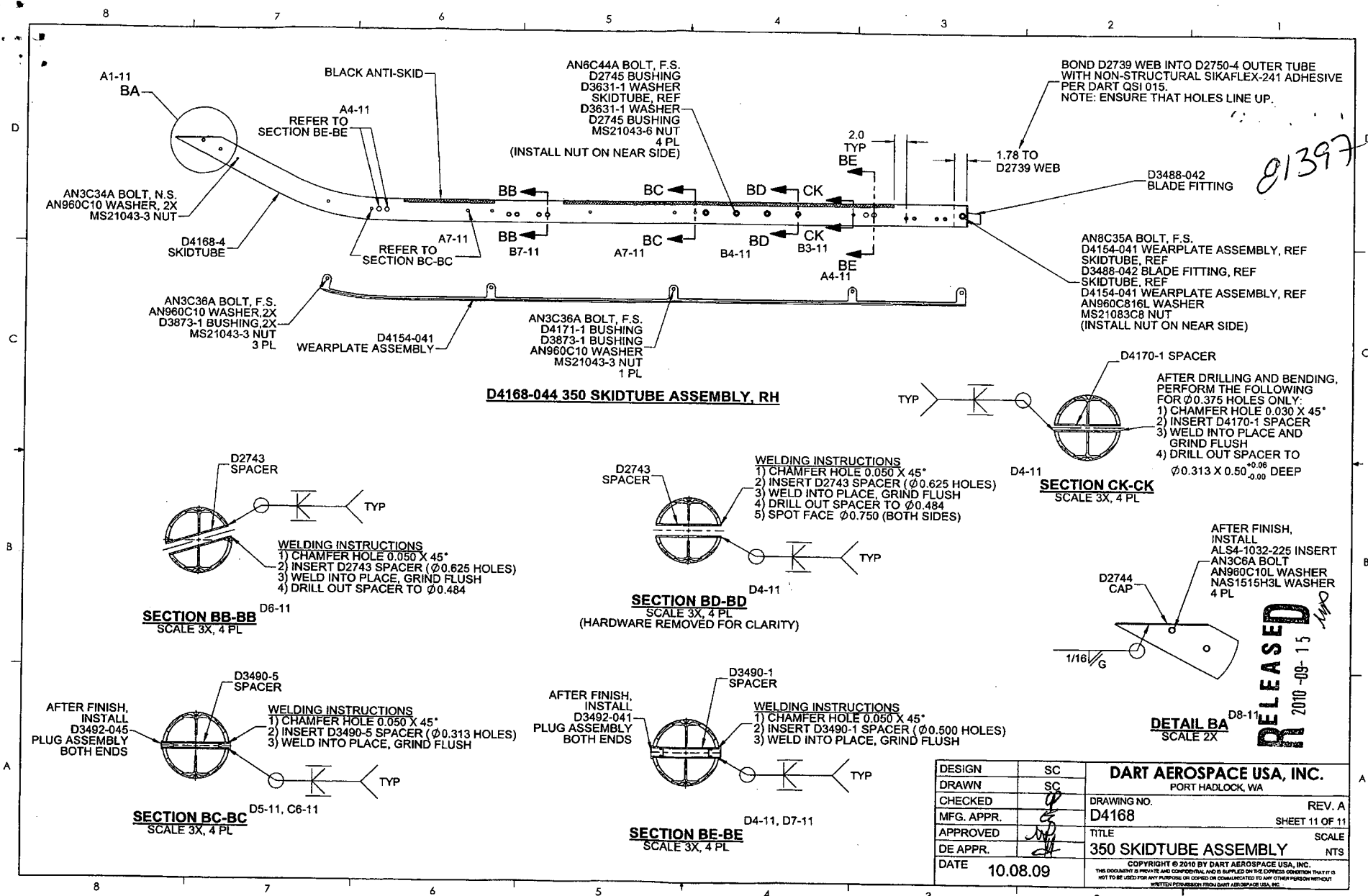
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 282

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 78413
Part number: A350-636-011
Description: Skid tube
Welding Process: Tig[☒] Mig[]
Base material: Aluminum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier David Buehl Date of Test Coupon 12.02.01
Welder Barclay Elliott Date of Test Coupon 12.02.01

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

81397**Work Order ID 81397**

March-14-12 7:47:18 AM

Accept

N900040100

Setup Start

NS1

Stop

NS2

Item ID: D350-636-015

Revision ID:

Item Name: Skidtube STD w/ Training Wearplates. LH

Start Date: 13/03/2012 Start Qty: 1.00

1

Required Date: 27/03/2012 Req'd Qty: 1.00

1

Cust Item ID:

Customer:

Reference:

Run Start

NR1

Stop

NR2

Approvals:

Process Plan:

MLJ

Date: 12/03/14 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3492

C

D4168

A

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0.00

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Memo

Photocopy blue file and type labels per PPP D350-636-015 CHG 002

Document Control

C212/04/09